

REMARKS

FORMAL MATTERS:

Claims 1, 3, 6, 8-16, 18, 21, 23-34 and new claims 35-36 are pending in the application after entry of the amendments set forth herein.

Claims 2, 4-5, 7, 17, 19-20 and 22 remain cancelled without prejudice.

Claims 1, 16, and 31 have been amended. Support for these amendments is found throughout the specification, e.g., at page 5, lines 10-15, page 12, Table 1 and page 20, lines 25-27.

Claims 35-36 are newly added. Support for these claims is found in the claims as originally filed, e.g., Claim 1 and throughout the specification, e.g., at page 5, lines 10-15, page 12, Table 1 and page 20, lines 25-27.

No new matter has been added.

STATUS OF THE CLAIMS

The Applicants thank the Examiner for indicating in the Advisory Action dated February 22, 2010 that the amendments presented in the Response to Final Office Action filed February 8, 2010 would be entered. Accordingly, new amendments presented in this response are made with the amendments presented in the Response to Final Office Action filed February 8, 2010 as having already been entered.

REJECTIONS UNDER 35 U.S.C. § 112 FIRST PARAGRAPH

Claims 1, 3, 6-16, 18, and 21-34 are rejected under 35 U.S.C. §112, first paragraph as allegedly failing to comply with the written description requirement.

In making this rejection, the Examiner asserts that the instant application claims subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner asserts that Claims 1, 3, 6-16, 18, and 21-34 do not comply with the written description requirement because the claims

“require the component providing the hydrophilic domains be ‘non-reactive’” and that the claims allegedly do not “appear to have any support for a limitation excluding the use of reactive components for these domains”.

In the spirit of expediting prosecution and without conceding to the correctness of the rejection, Claims 1, 16 and 31 have been amended to remove the element of “a non-reactive component”. As such, the Applicants respectfully submit that the amended claims sufficiently comply with the written description requirement.

Accordingly, in view of the amendments to the claims and the remarks made above, the Applicants respectfully request that the rejection of Claims 1, 3, 6-16, 18, and 21-34 under 35 U.S.C. §112, first paragraph, be withdrawn.

REJECTIONS UNDER 35 U.S.C. § 112 SECOND PARAGRAPH

Claims 1, 3, 6-16, 18, and 21-34 are rejected under 35 U.S.C. §112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

In making this rejection, the Examiner asserts that “[b]ecause there is no support for the hydrophilic domains being ‘non-reactive’ as discussed above, it is entirely unclear what the scope of this new limitation is”.

As noted above, Claims 1, 16 and 31 have been amended to remove the element of “a non-reactive component”. As such, the Applicants respectfully submit that the limitations of the amended claims are sufficiently clear and are therefore, not indefinite.

Accordingly, in view of the amendments to the claims and the remarks made above, the Applicants respectfully request that the rejection of Claims 1, 3, 6-16, 18, and 21-34 under 35 U.S.C. §112, second paragraph, be withdrawn.

REJECTIONS UNDER 35 U.S.C. § 103(A)

Claims 1, 3, 6-11, 29, 31, 32, and 34-Say, Mizutani, Saby

Claims 1, 3, 6-11, 29, 31, 32, and 34 were rejected under 35 U.S.C. §103(a) as being unpatentable over Say et al. (US Patent No. 6,103,033) in view of Mizutani et al. (Bull. Chem.

Soc. Jpn., 64, 1991, pp. 2849-2851) and/or Saby et al. (*Analytica Chimica Acta*, 304, 1995, pp 33-39).

In making the rejection, the Examiner asserts that Say teaches all of the claimed limitations apart from the element of “a polymer that provides hydrophilic domains in the conductive ink”. (Office Action mailed October 8, 2009 at page 4) To remedy this deficiency, the Examiner cites Mizutani for allegedly teaching “combining the enzyme with a polymer such as polyethylene glycol (PEG) to improve the activity of the enzyme” and Saby for teaching that “PEG prevents the enzyme from denaturing in the carbon electrode”.

In order to meet its burden in establishing a rejection under 35 U.S.C. § 103(a), the Office must first demonstrate that the combined prior art references teach or suggest all the claimed limitations. *See Pharmastem Therapeutics, Inc. v. Viacell, Inc.*, 491 F.3d 1342 (Fed. Cir. 2007) (“the burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill in the art would have had reason to attempt to make [every element of] the composition or device, or carry out the [entire] claimed process, and would have had a reasonable expectation of success in doing so,” (citing *KSR Int'l Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1395 (U.S. 2007))).

In the spirit of expediting prosecution and without conceding to the correctness of the rejection, Claims 1, 16 and 31 have been amended to specify that the conductive ink comprises a polymer “separate from the at least one enzyme” and “the amount of the polymer in the conductive ink is from 0.01% to 2% by weight”. As such, the conductive ink comprises an enzyme which is distinct and separate from the polymer. In addition, the amount of the polymer in the conductive ink is from 0.01% to 2% by weight of the conductive ink.

The Applicants submit that none of the cited references teach or suggest this element of the claims. To the contrary, Mizutani and/or Saby specifically teach a polyethylene glycol (PEG)-modified enzyme (e.g., PEG-modified GOD) which contains PEG substituents covalently attached to the enzyme and therefore fail to teach a conductive ink comprising a polymer which is “separate from the at least one enzyme”, as claimed. In addition, none of the cited references teach or suggest the amount of the polymer separate from the enzyme in the conductive ink is “from 0.01% to 2% by weight of the conductive ink”, as claimed. Indeed, since Mizutani and/or Saby both only teach PEG-modified enzymes, neither reference teaches or suggests a polymer

separate from the at least one enzyme in an amount from 0.01% to 2% by weight of the conductive ink, as claimed.

Accordingly, because the cited references of Say, Mizutani and Saby neither alone nor in any combination teach the elements of a conductive ink comprising a polymer “separate from the at least one enzyme” and “the amount of the polymer in the conductive ink is from 0.01% to 2% by weight”, the cited references fail to teach or suggest each and every element of the rejected claims and therefore a *prima facie* case of obviousness cannot be established. Applicants thus, respectfully request withdrawal of this rejection.

Claims 1, 3, 6-11, 29, and 31-Say and Charlton

Claims 1, 3, 6-11, 29, and 31 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Say et al. (US Patent No. 6,103,033) in view of Charlton et al. (US Patent No. 5,798,031). This rejection is reiterated from previous Office Actions mailed October 2, 2008 and February 2, 2009.

In making this rejection, the Examiner asserts that Say teaches all of the claimed limitations apart from the element of “a polymer that provides hydrophilic domains in the conductive ink”. (Office Action mailed October 8, 2009 at page 4) To remedy this deficiency, the Examiner cites Charlton for its alleged teaching that “the enzyme can be deposited down onto an electrode in presence of a hydrophilic polymer, which would increase hydration access to the enzyme itself.”

It remains the Applicant's position (as discussed in detail in the Response to Office Actions filed February 8, 2010 and August 19, 2008 and in the Appeal Brief filed November 7, 2008) that Charlton does not teach incorporation of the hydrophilic polymer in the conductive ink of the working electrode in the manner disclosed by the claimed invention. As such, the combination of Say and Charlton does not teach each and every element found in the claims as required to establish a *prima facie* case of obviousness. For the sake of brevity, the Applicants' prior arguments are not reiterated herein.

However, in the spirit of expediting prosecution and without conceding to the correctness of the rejection, Claims 1, 16 and 31 have been amended to specify that “the amount of the polymer in the conductive ink is from 0.01% to 2% by weight”. As such, the conductive ink

comprises an enzyme which is distinct and separate from the polymer and the amount of the polymer in the conductive ink is from 0.01% to 2% by weight of the conductive ink.

The Applicants submit that none of the cited references teach or suggest this element of the claims. As acknowledged by the Examiner, Say is completely silent to “a polymer that provides hydrophilic domains in the conductive ink”. Furthermore, Applicants submit that Charlton also fails to teach or suggest this element. Indeed, Charlton is completely silent to an amount of polymer in the conductive ink much less an amount of polymer in the conductive ink that is “0.1% to 2% by weight”, as claimed.

Accordingly, because the cited references of Say and Charlton neither alone nor in combination teach the element of “the amount of the polymer in the conductive ink is from 0.01% to 2% by weight” as claimed, the cited references fail to teach or suggest each and every element of the rejected claims and therefore a *prima facie* case of obviousness cannot be established. Applicants thus, respectfully request withdrawal of this rejection.

Claims 1, 3, 6-16, 18, and 21-34-Feldman, Say, Mizutani, and Saby

Claims 1, 3, 6-16, 18, and 21-34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Feldman in view of Say and either Mizutani and/or Saby.

As discussed above, an element of the claimed invention is a conductive ink that comprises a polymer “separate from the at least one enzyme” and “the amount of the polymer in the conductive ink is from 0.01% to 2% by weight”. The Applicants submit that none of the cited references alone or in any combination teach or suggest these elements of the claims.

Since Feldman does not teach or suggest preparing an electrode by incorporating a hydrophilic polymer in the conductive ink, Feldman can not remedy the deficiencies of Say, Mizutani, and Saby. Applicants thus, respectfully request withdrawal of this rejection.

Claims 1, 3, 6-16, 18, and 21-31-Feldman, Say, and Charlton

Claims 1, 3, 6-16, 18, and 21-31 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Feldman in view of Say and Charlton.

As discussed above, an element of the claimed invention is a conductive ink that comprises a polymer where “the amount of the polymer in the conductive ink is from 0.01% to

2% by weight". The Applicants submit that none of the cited references alone or in any combination teach or suggest this element of the claims.

Since Feldman does not teach or suggest preparing an electrode by incorporating a hydrophilic polymer in the conductive ink, Feldman can not remedy the deficiencies of Say and Charlton. Applicants thus, respectfully request withdrawal of this rejection.

Claims 32 and 34- Say, Charlton, and Yamashita

Claims 32 and 34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Say in view of Charlton, and in further view of Yamashita.

As stated above, the combination of Say and Charlton fails to render the claimed invention obvious. As Yamashita has merely been cited for its alleged teaching of polyethylene glycol as a type of hydrophilic polymer, Yamashita fails to remedy the deficiencies of Say and Charlton.

Applicants thus, respectfully request withdrawal of this rejection.

Claims 32-34- Feldman, Say, Charlton, and Yamashita

Claims 32-34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Feldman in view of Say and Charlton, and in further view of Yamashita.

As noted above, the combination of Feldman in view of Say and Charlton fails to render the claimed invention obvious. As Yamashita has merely been cited for its alleged teaching of polyethylene glycol as a type of hydrophilic polymer, Yamashita fails to remedy the deficiencies of Feldman, Say and Charlton.

Applicants thus, respectfully request withdrawal of this rejection.

CONCLUSION

Applicant submits that all of the claims are in condition for allowance, which action is requested. If the Office finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-0815, reference number ADCI-073.

Respectfully submitted,
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